

APX Green Power Markets

Foundation for a Dynamic Wholesale Green Power Market

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The Checklist

- I. Regulatory Incentives
- II. Registry and Clearing System
- III. Trading Market
- IV. Hedging Instruments

I. Regulatory Incentives

- Supply-side
 - The Renewable Portfolio Standard
 - mandatory purchase obligation
 - guarantees demand and universal participation
 - breaks the voluntary participation barrier
- Retail markets
 - example of regulatory incentive, California customer credit program
 - customer choice has the most potential

II. Registry System

- Registry verifies the generation of green power
- The Renewable Energy Credit is established -- a derivative product independent of the energy trade
- The Registry establishes title and clears transfer of title between participants
- Registry database provides administrative tools for regulators, and aggregated market information for public



Registry System Examples

- Texas Renewable Credit Program
 - Texas RECs currently in operation in ERCOT to establish REC market and to monitor RPS compliance
- New England Generation Information System
 - NEPOOL is establishing a registry that will track RPS eligibility and emissions factors from ALL generation in the NE-ISO control area



Registration

[Change Profile](#)

Account Management

[Account Management](#)

New Account Inbox

Account Approval

Account Name	Create Date	Status
No Records!		

Generation Approval

Account Name	Gen Unit Code	Facility Type
No Records!		

Personalize Participant

In ERCOT admin

Please select an account:

ERCOT admin

Go

ERCOT Administrator Roles & Reports

Accounts

[View by Account Type \(R3\)](#)[View by Technology Type \(R3\)](#)[View with No Activity](#)[View Account Status](#)[View Logins](#)

Generation

REC Inbox (Incoming)

Pending RECs	Reason to Retire	Compliance Year	Counter Party	Confirm	Reject
93	Mandatory Compliance	2002	Retailer200	Confirm	Reject

REC Outbox (Outgoing)

Pending RECs	Counter Party	Withdraw
No Records!		

REC Summary

Year	Quarter	Technology Type	Active RECs	Pending RECs	Retired Pending RECs	Retired RECs	Expired RECs
No Records!							

Expire REC

Year: 2000

E-mail participants that have REC due to expire

Create REC

Year: 2000 Quarter: 1

Preview Quarterly REC Award

[RECs Adjustment](#)

Compute FRR

Year: 2000

Annual Capacity Target: 0

☐ Capacity Conversion Factor: 0

Compute FRR

NEPOOL GIS Detail

- Tracks all generation in NE-ISO from source to sink
 - Authenticates generation attributes and creates base for verifiable tradable certificate markets
 - Automates complicated processes
 - Tracks emissions factors
 - Meets reporting requirements

NEPOOL GIS Detail Cont'd

- NEPOOL GIS is the backbone for several potentially tradable markets
 - Renewable Energy Credits
 - Generation Mix
 - Emissions Factors
- Provides powerful administrative tools
- Target for implementation: January 2002

III. Trading Markets

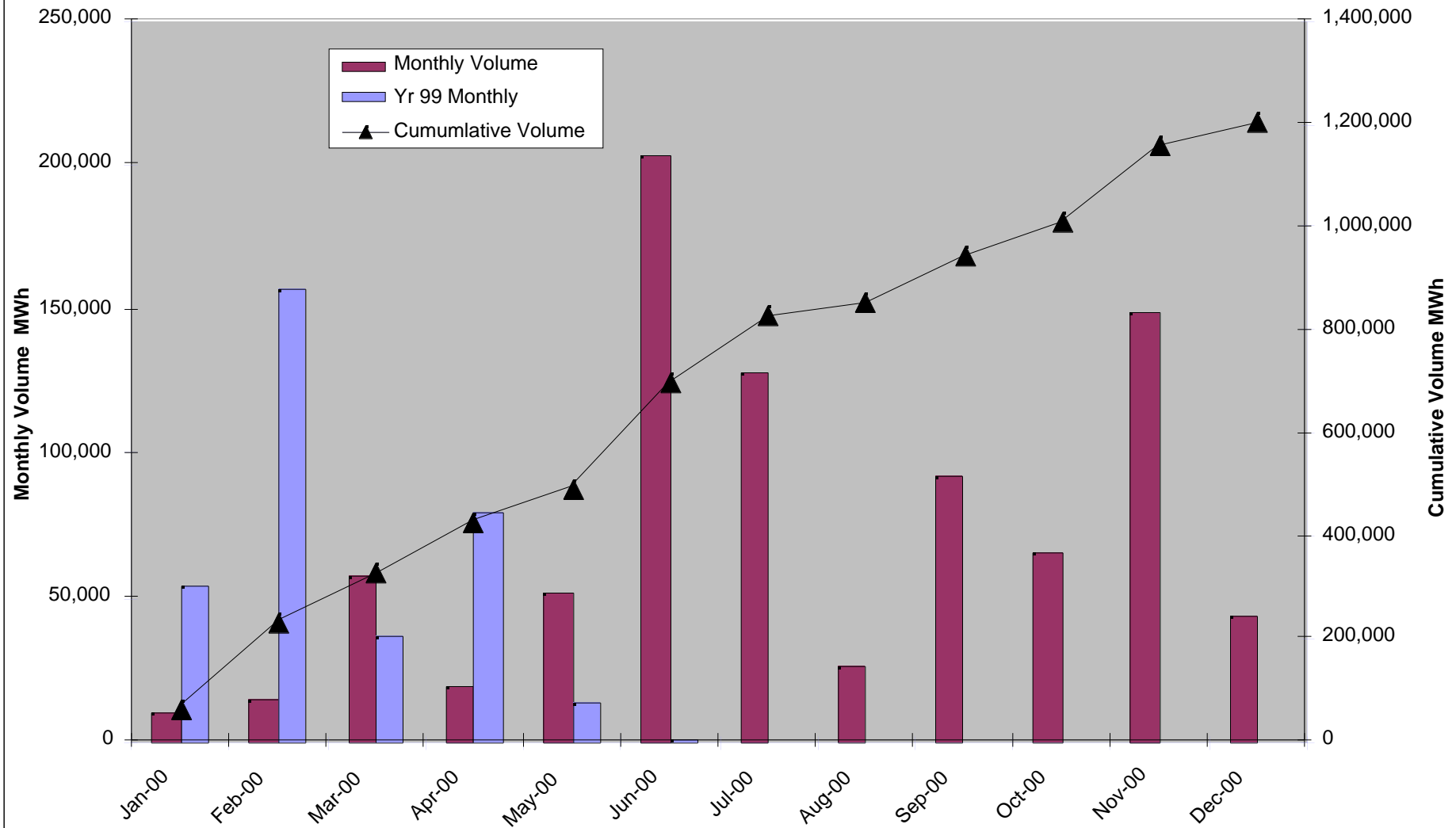
- Trading market creates venue for exchange of RECs, shopping for emissions factors, transparent pricing, and index price on which to hedge
- Example, APX California Green Power Market
 - Year 2000 volume: just over 1 TWh
 - Year 2001 volume: approx. 350,000 MWh



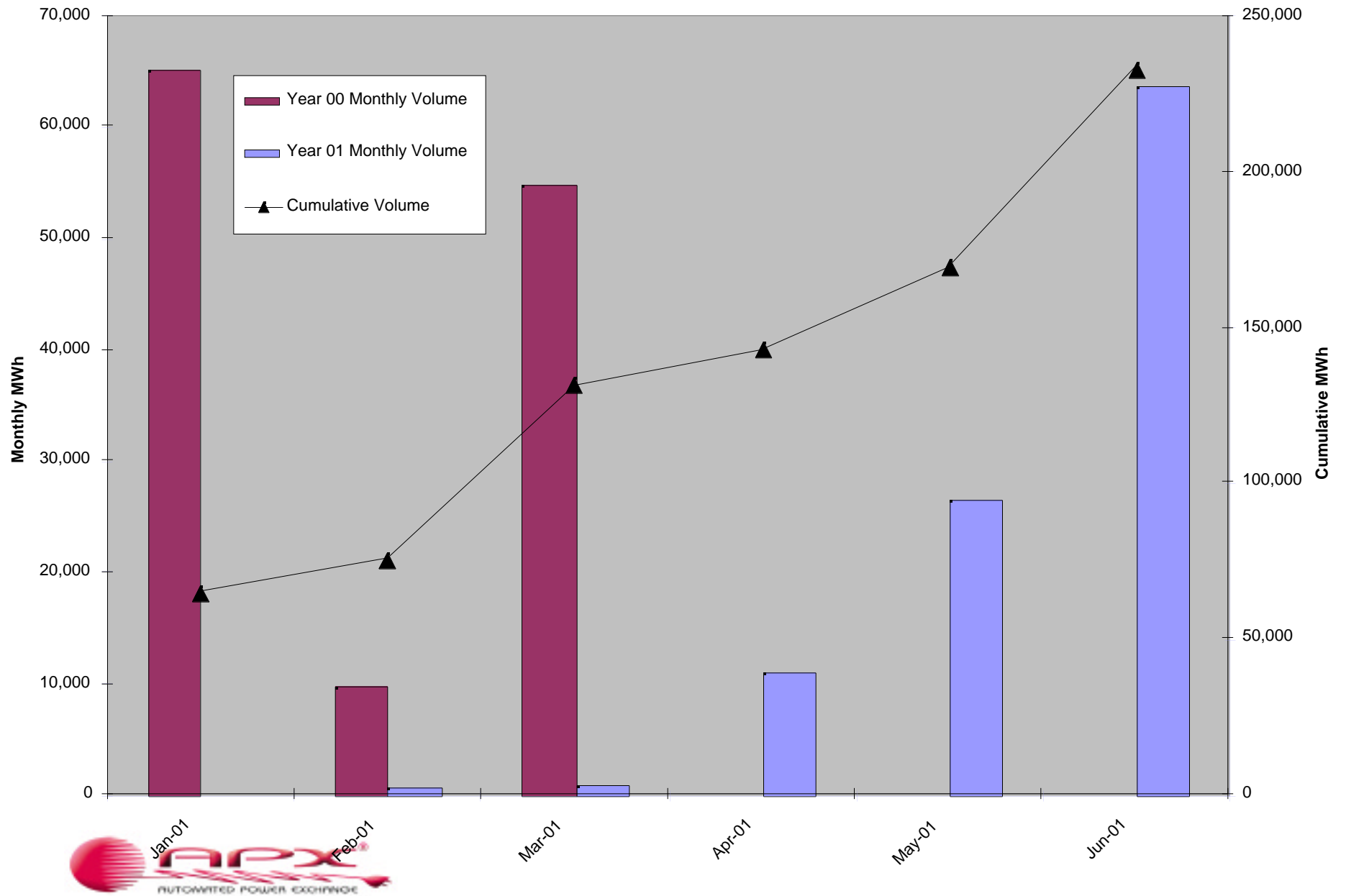
IV. Hedging Instruments

- Hedging instruments in use in APX California
 - Green option: year or longer time strip with nomination of volume within established price band
 - Staging spot purchases to compliance calendar

Green Ticket Market Yr 2000



Green Ticket Market Year 2001



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